Bioenergy 2015: Opportunities in a Changing Energy Landscape

Working Agenda

Tuesday and Wednesday, June 23–24, 2015
Walter E. Washington Convention Center, Washington, D.C.

Breakout Session Tracks:
Track A: Feedstocks Track
Track B: Conversion Track
Track C: Integrated Biorefineries and Waste-to-Energy Track
Track D: Finance, Policy, and Communications Track

Tuesday, June 23, 2015	
7:00 a.m.–8:00 a.m.	**Breakfast and Registration**
8:00 a.m.–8:15 a.m.	**Welcome Keynote** Jonathan Male, Director, Bioenergy Technologies Office (BETO), U.S. Department of Energy (DOE)
8:15 a.m.–8:45 a.m.	**Congressional Keynote(s)** To be announced
8:45 a.m.–9:00 a.m.	**Introductory Keynote** David Danielson, Assistant Secretary for Energy Efficiency and Renewable Energy (EERE), U.S. Department of Energy
9:00 a.m.–9:30 a.m.	**Morning Keynote/Interview** Ernest Moniz, Secretary of Energy, U.S. Department of Energy *(Invited)*
9:30 a.m.–10:45 a.m.	**Plenary I: Policy and Market Overview** This session focuses on a mix of issues and policies currently impacting growth and deployment within the bioenergy market. Topics include: state-level advantages and disadvantages of low-carbon fuel standards, possibilities surrounding reusing carbon dioxide in algae growth, understanding oil price forecasts and potential impacts on the bioeconomy, and impacts of international biofuels policies (e.g., Brazil).

	Moderator: Jim Lane, Editor and Publisher, *Biofuels Digest* ➢ Matt Carr, Executive Director, Algae Biomass Organization ➢ Joel Velasco, Senior Vice President, Albright Stonebridge Group
10:45 a.m.–11:15 a.m.	Morning Break with Posters and Exhibitors
11:15 a.m.–12:30 p.m.	**Plenary II: Biofuels in a Global Marketplace** Interest in biofuels and bioenergy is growing internationally, driven by interests that include reducing reliance on fossil fuels, improving fuel security, expanding the utilization of domestic resources, and decreasing the release and build-up of climate change gases. This session brings together industry representatives who are active in building biorefineries outside the continental United States to discuss the opportunities that exist in the global marketplace, the various issues that are routinely considered when pursuing these opportunities, and the lessons that can be learned as advanced biorefinery technologies, operations, and business models are adapted to meet the needs of the global marketplace. **Co-Moderator:** Jim Spaeth, Program Manager–Demonstration and Market Transformation, U.S. Department of Energy, Bioenergy Technologies Office ➢ Daniel Cummings, President, POET-DSM Advanced Biofuels ➢ Michele Rubino, Vice President of Business and Corporate Development, Beta Renewables
12:30 p.m.–1:30 p.m.	**Lunch**
1:30 p.m.– 1:45 p.m.	**BETO Award Ceremony**
1:45 p.m.– 2:15 p.m.	**Afternoon Keynote** To be announced
2:15 p.m.– 3:45 p.m.	**BREAKOUT SESSION 1** **1-A: Past, Present, and Future Feedstock Resources** This breakout session focuses on historical, current, and future national biomass assessment activities in the BETO portfolio. To begin the discussion, the current state industry and biomass supply and demand for energy and bioproducts will be reviewed. Recent advancements in technology and policy have promoted the expanded use of low-cost biomass in limited regions. Feedstocks of the future include dedicated and mixed sources within multiple regions. The panelists will highlight ongoing work to address potential existing supply, feedstock sustainability, and market

analysis to assure a reliable and sustainable domestic supply of cost-effective biomass for a growing bioeconomy.

1-B: Innovations in Basic Science Across Agencies to Enable Bioenergy

New ideas emerging from basic science research have the potential to transform the bioenergy industry. This session will bring together leading researchers with projects from NSF, ARPAE, DOE Office of Science, and DARPA to explore some of these potentially disruptive technologies and present their long-term visions for bioenergy. These projects will highlight how coordination between basic and applied R&D offices can help to fill the research pipeline and enable game-changing technologies to succeed.

Moderator: Jay Fitzgerald, ORISE Fellow–Biochemical Conversion, U.S. Department of Energy, Bioenergy Technologies Office

- Sunil Chandran, Director, Biology, Amyris, Inc.
- Paul Dauenhauer, Co-Director, Catalysis Center for Energy Innovation, University of Minnesota
- John Ralph, Professor, Department of Biochemistry, Wisconsin Energy Institute

1-C: Bringing Biorefineries into the Mainstream

This session focuses on the real world experiences of companies advancing through the stages of scale-up from pilot through commercialization, with a special focus on what it takes to build a successful commercial bioenergy business.

- Doug Berven, Vice President of Corporate Affairs, POET
- Harrison Pettit, Vice President of Business Development, PacificAg
- Theodora Retsina, CEO, American Process, Inc.
- Rick Weyen, Vice President, Strategy and Business Development, Tesoro Companies, Inc.

1-D: The Pitch

This session focuses on innovative bioenergy and bioproduct startups that have the opportunity to pitch their creative business ideas to a panel of experts and conference attendees. The expert

	panel will provide valuable feedback to the presenters. **Moderator:** Jim Lane, Editor and Publisher, *Biofuels Digest* Panel of Experts: ➢ Brian Baynes, Partner, Flagship Ventures ➢ William Crump, Leidos Engineering ➢ Geoff Duyk, Managing Director and Partner, TPG Biotechnology ➢ Mark Riedy, Partner, Kilpatrick Townsend & Stockton LLP
3:45 p.m.–4:15 p.m.	**Afternoon Break with Posters and Exhibitors**
4:15 p.m.–5:30 p.m.	**Plenary III: Early Market Adopters** This session focuses on the rising demand for biofuels and bioproducts with an emphasis on early adoption markets that are driving new innovation. The panel will provide perspectives from the commercial aviation, maritime, and military sectors' need for biofuels to help meet sustainability and security demands, and discuss the opportunities for biomass to make an impact on the commercial products industry. **Moderator:** Chris Tindal, Director for Operational Energy, Department of the Navy Energy Office ➢ Taite McDonald, Senior Advisor, Holland Knight ➢ Rob Myrben, Senior Managing Director, Fuel Optimization, Airlines for America ➢ Tom Thompson, U.S. Department of Transportation, Office of Environment, Marine Administration (MARAD)
5:30 p.m.–7:30 p.m.	**Evening Poster Reception**

Wednesday, June 24, 2015	
7:00 a.m.–8:00 a.m.	**Breakfast and Registration**
8:00 a.m.–8:15 a.m.	**Day 2 Introductory Keynote** Reuben Sarkar, Deputy Assistant Secretary for Transportation, U.S. Department of Energy
8:15 a.m.–8:45 a.m.	**U.S. Environmental Protection Agency Keynote** Christopher Grundler, Director, Office of Air Quality and Transportation, U.S. Environmental Protection Agency
8:45 a.m.–9:00 a.m.	**White House Keynote** To be announced
9:00 a.m.–9:30 a.m.	**Morning Keynote** Tom Vilsack, Secretary of Agriculture, U.S. Department of

	Agriculture (*Invited*)
9:30 a.m.–10:30 a.m.	**Plenary IV: Fuels of the Future: The Co-Optimization of Fuels and Vehicles** This session focuses on EERE's emerging work in the co-optimization of fuels and vehicle engines. This research highlights efforts to produce high-performing fuels, including intermediate ethanol blends, which have the potential to out-perform petroleum derived fuels, while significantly reducing carbon emissions.
10:30 a.m.–10:45 a.m.	**Morning Break with Posters and Exhibitors**
10:45 a.m.–12:15 p.m.	**BREAKOUT SESSION 2** **2-A: The Future of Algae-Based Biofuels** This session focuses on the opportunities for algae-based biofuels and bioproducts in a diversified energy future and the next steps towards seizing those opportunities. Panelists will discuss the challenges of scaling-up production operations, the market role of bioproducts, and the future of algal technologies. **Moderator:** Christy Sterner, Technology Manager for Algal Feedstocks, U.S. Department of Energy Bioenergy Technologies Office ➢ Ron Chance, Executive Vice President, Algenol ➢ John McGowen, ATP3 **2-B: Conversion: New/Emerging Pathways and Successes in Existing Pathways** This session focuses on outcomes of existing conversion pathways, and novel technologies addressing the capabilities of biologically, chemically, and thermochemically derived biofuels and bioproducts from lignocellulosic and algal feedstocks. Panelists will focus on how to strategically leverage innovative and cost-effective technological solutions to meet the challenges faced by this emerging landscape. **Moderator:** Siva Sivasubramanian, ORISE Fellow–Conversion Technologies/Demonstration and Market Transformation, U.S. Department of Energy, Bioenergy Technologies Office ➢ Abhijeet Borole, Research Scientist, Oak Ridge National Laboratory ➢ Lori Giver, Vice President of Biological Engineering, Calysta Energy

	➢ Fred Moesler, Chief Technology Officer, Renmatix **2-C: Biogas and Beyond: Challenges and Opportunities for Advanced Biofuels from Wet-Waste Feedstocks** This breakout session will feature presentations that illustrate the complex nature of the challenges and opportunities surrounding wet-waste streams as a feedstock for the production of advanced biofuels. Presentation topics within this session will focus on Resource Assessment, Bio-product Precursors from Anaerobic Digestion, Microbial Electrochemical Cells, as well as Algae and Wastewater. ➢ Corinne Drennan, Energy & Environment Directorate, Pacific Northwest National Laboratory ➢ Matt Hutton, Project Engineer, MicroBio Engineering ➢ Bruce Logan, Kappe Professor of Environmental Engineering and Evan Pugh Professor, Penn State ➢ Gregory Stephanopoulos, W.H. Dow Professor of Biotechnology and Chemical Engineering, Massachusetts Institute of Technology **2-D: Reaching Your Stakeholders: Effectively Engaging and Educating Key Audiences** This session focuses on demonstrated communication strategies and tactics to engage and educate key audiences—such as the general public, communities, policy makers, and investors—on bioenergy. Panelists, through presentations and facilitated discussion, will provide attendees with unique insights, success stories, and best practices and lessons learned that improved public perception of bioenergy at local, regional, and national levels. **Moderator:** Sheila Dillard, Communications Lead, U.S. Department of Energy Bioenergy Technologies Office ➢ Dawn Moore, Communications Director, Renewable Fuels Association ➢ Emily York, Vice President of Communications, Abengoa
12:15 p.m.–1:15 p.m.	**Lunch**
1:15 p.m.–1:30 p.m.	**BETO Multi-Media Presentation**
1:30 p.m.–1:45 p.m.	**BioenergizeME Infographic Challenge Award Ceremony** Recognition of the student team that won the BioenergizeME

	Infographic Challenge
1:45 p.m.–3:15 p.m.	**BREAKOUT SESSION 3** **3-A: Growing a Water-Smart Bioeconomy** How can we scale up sustainable bioenergy production in light of water limitations and climate variability? Speakers will discuss projections for water resources and the links between water, feedstock production, and biorefinery operations. In addition to defining water-related challenges, speakers will explore smart practices, lessons learned, and opportunities for the bioenergy community to navigate and overcome these challenges. **Co-Moderator:** Nichole Fitzgerald, ORISE Fellow–Thermochemical Conversion, U.S. Department of Energy Bioenergy Technologies Office **Co-Moderator:** Corinne Young, Chief Executive Officer, Corinne Young, LLC ➢ Lisa Dyson, Chief Executive Officer, Kiverdi ➢ Jim Millis, Chief Technology Officer, BioAmber ➢ Molly Morse, Chief Executive Officer, Mango Materials ➢ Todd Werpy, Senior Vice President and Chief Technology Officer, ADM ➢ Ken Williams, Principal Chemical Engineer, Nature Works **3-B: The Changing Landscapes for Biobased Chemicals: A Decade After the Top Value Added Chemicals from Biomass** This session focuses on changes in biobased chemicals. It has been more than a decade since DOE published its first "Top Value Added Chemicals from Biomass" report. Panelists will discuss the vision that shaped these reports, recent biobased chemicals manufacturing successes, and the outlook for biomass-derived products. **3-C: Renewable Gaseous Fuels** This session focuses on renewable gaseous fuels (most commonly biogas), a product of anaerobic digestion of animal and agricultural wastes, and waste water treatment byproducts. They can be used as fuels, used to solve transportability of biomass problems, injected into natural gas pipelines if properly cleaned up and they can be processed with carbon dioxide to produce liquid biofuels. Biogas itself can be a vehicle fuel and a component of a strategy to "green"

	the natural gas pipe system. Hydrogen produced from solar, wind or biogas is also a renewable gaseous fuel **3-D: How States are Promoting Advanced Biofuels** This session focuses on the initiatives, incentives, and regulations that state governments could employ to accelerate growth of the advanced biofuels economy. From the role of regional consortia to the most effective and enticing forms of financing, the panelists' discussion will center around "State policy in an era of evolving federal support." While the greater focus of this panel will be on biofuels, we encourage some discussion on biopower and bioproducts to enrich audience understanding of an increasingly complex and diversified bio-economy.
3:15 p.m.–3:30 p.m.	**Afternoon Break with Posters and Exhibitors**
3:30 p.m.–4:30 p.m.	**Plenary V: Environmental Impacts of Biofuels** Panelists will discuss the state of understanding of the environmental impacts of biofuels, highlighting positive examples as well as issues that warrant additional attention. Panelists will also examine underlying assumptions that contribute to misconceptions about biofuels and discuss opportunities for achieving positive environmental outcomes and mitigating concerns.
4:30 p.m.–5:00 p.m.	**Afternoon Keynote** To be announced
5:00 p.m.–5:15 p.m.	**Conference Close and Thank You** Jonathan Male, Director, Bioenergy Technologies Office, U.S. Department of Energy